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The role of local communities in a global risk landscape

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Chapter 3

What is community resilience and how does it come into action?

Although increasing attention has been given to the need to engage local communities and facilitate community resilience, discrepancies between theory and practice remain evident. Myths, misconceptions and mistakes persist in post-disaster emergency operations and in reconstruction efforts following disaster. The 'command and control' approach typically deployed by disaster management agencies results in an increasing dependency on external support and annihilates the potentialities of local communities. We emphasise the importance of recognizing community resilience and the capacity of local communities to self-organise. We describe examples of community resilience in action as it occurred following the earthquake in the Province of L'Aquila in the Abruzzo region of central Italy on 6 April 2009. We discuss the aftershock economies and aftershock societies that developed in the extraordinary communities that emerged around rural villages and in mountain areas. A multi-methods approach was used, primarily drawing on personal experiences of life in the autonomous locally-organised camps that were established in rural areas following the earthquake. We conclude that the persistence of various disaster myths and the failure to acknowledge community resilience undermine more effective, socially-sustainable, disaster management and rural development planning. We argue that there should be greater awareness of the underlying community resilience, and that greater attention should be given to recognizing and strengthening the capacities of local communities.

Experiencing local community resilience in action: Learning from post-disaster communities

Introduction

The unpredictability and uncertainty of a world in crisis and overexposed to disasters has encouraged planners and policy-makers to attempt to understand local development through the concept of resilience (Brown and Westaway, 2011; Mitchell, 2013; Saunders and Becker, 2015). More than many other concepts, 'resilience' represents the adaptive and evolutionary dynamics that allow systems (including rural communities) to respond to disturbance and change (Davidson, 2010; Darnhofer et al., 2016). The increasing number of disasters and economic and social crises that destabilize vulnerable areas has resulted in the concept of resilience gaining currency in the discourses of regional development (OECD, 2011, 2013; McManus et al., 2012; Scott, 2013; Schouten et al., 2013; Kelly et al., 2015), disaster risk reduction (Tobin, 1999; Paton and Johnston, 2001; Adger et al., 2005; Norris et al., 2008; Brown and Westaway, 2011), and climate change adaptation (Pelling, 2011; Khailani and Perera, 2013; Arnold et al., 2014; Dale et al., 2015). Policy discourses around the world also reflect this trend (e.g. UN-ISDR, 2005, 2007; 2015; Mitchell, 2013; GFDRR, 2014, 2015; EC, 2013, 2014). A crucial challenge for the future will be enhancing understanding about how to achieve positive outcomes for local communities in disaster-prone areas using the lens of resilience.

While we define community resilience as the social survival processes that occur within places and that are put into action by local communities to address the negative social and economic impacts experienced during crises, there are theoretical and practical limitations that hinder a full comprehension of resilience and its use in the social world. At a theoretical level, the concept is vague and ill-defined (Gaillard, 2010; Manyena, 2014; Matyas and Pelling, 2015), with Davoudi (2012, p.299) suggesting that "it is not quite clear what resilience means, beyond the simple assumption that it is good to be resilient". Many articulations of resilience inadequately address its social dimensions, and even progressive interpretations (e.g. 'bouncing forward') are often little more than clichés (O'Hare and White, 2013; McEvoy et al., 2013). Current understandings of resilience are generally too weak to provide planning practice with the tools and methodologies needed to address, engage and strengthen local communities (Mitchell, 2013).

At a practical level, the lack of clarity about how to understand, recognise, engage and enhance the dynamics of resilient communities enables traditional models of managing and planning (often coming from a technocratic engineering perspective) to be perpetuated. Because of time pressure and the inadequacy of alternative models, decision-makers often adopt a 'command and control' approach towards local communities. While it is known that top-down approaches can produce pathologies at the environmental level (Holling and Meffe, 1996), little has been said about the negative consequences of such approaches on local communities (Coles and Buckle, 2004). Thus, an improved understanding of the dynamics of resilience that allows local rural communities to survive socially is needed, especially in less-favoured areas and post-disaster situations.

The purpose of this paper is to demonstrate how community resilience actually comes into action in post-disaster situations in rural communities. In doing this, we provide a better understanding of how the concept of resilience can be applied to the social world. Rather than the frequently-relied upon command and control approach, which has the potential to obliterate community resilience, we argue that an awareness of the dynamics of community resilience and an understanding of how to harness the resilience embedded in local rural communities would be desirable. By examining the post-disaster situation in the rural villages surrounding the city of L'Aquila in the Abruzzo region of Italy, following the April 2009 earthquake, we discuss how

community resilience in action was activated and revealed in both lay and professional contexts. Using first-hand experiences of life in the emergency camps (especially in the self-organised camps that autonomously sprang up in rural villages), we strongly reject the ‘disaster myths’ that are promulgated in post-disaster situations and that frequently drive the responses of disaster management agencies.

Transferring resilience into the social world

‘Resilience’ has many definitions and a long history (Adger, 2000; Davidson, 2010; Alexander, 2013a; Berkes and Ross, 2013; Brown, 2014). The simplistic mechanistic understanding considered that resilience was a force that made a system return to a pre-designated state. In this approach, the resistance of a system to disturbance and the speed by which it returned to equilibrium were the measures of resilience (Davoudi, 2012). In contrast, the ecological systems approach focused not on the ability of systems to persist, but on their ability to adapt. However, both perspectives adopted an equilibristic view of resilience with notions such as stability, steady-state or new state, equilibrium and multiple equilibria, which evoke “a Newtonian world view which considers the universe as an orderly mechanical device; a giant clock whose behaviour could be explained and predicted by mathematical rules and monitored by command and control systems. ... In this clockwork universe, a resilient system is one which may undergo significant fluctuation but still return to either the old or a new stable state” (Davoudi, 2012, p.301). As Holling and Meffe (1996, p.333) argued, many theories of ecosystem resilience reinforce the pathology of equilibrium-centered command and control. These theories “carry an implicit assumption that there is global stability – that there is only one equilibrium steady-state”, and that these theories “transfer the command-and-control myopia of exploitive development to similarly myopic demands for environmental regulations and prohibitions”.

What is missed by equilibristic interpretations of resilience is that, in the natural world, systems continuously evolve, not only by adapting to external disturbances, but also by modifying their internal dynamics and recombining their structures and processes for transformation and change (Pelling et al., 2015; Koontz et al, 2015). Systems, especially social systems, arguably learn and transform (Folke, 2006; Wals, 2007; Krasny et al., 2010). Such transformations are healthy and necessary for the system’s continued survival (Magis, 2010; Davoudi et al., 2013). Change is a dynamic and a constant in human society. Therefore, evolutionary resilience (or social-ecological resilience) seems more appropriate than equilibristic approaches in interpreting community resilience as a healthy process that enables social change (Cote and Nightingale, 2012; Fabinyi et al., 2014). However, the social-ecological understanding of resilience also has limits in fully addressing social theories and concepts, especially equity, power relationships and social change dynamics (Robards et al., 2011; Armitage et al., 2012; Cote and Nightingale, 2012; Wilson et al., 2013; Fabinyi et al., 2014; Brown, 2014; Walsh-Dilley et al., 2016).

In trying to reach a deeper understanding of what resilience means for communities and how it could be empowered when transferring (and translating) resilience from the natural to the social world, Davoudi (2012) suggested that four key issues should be considered:

1. the intentionality of human actions (how can resilience be built and counter-productive actions avoided?);
2. the goals and outcomes of resilience for local communities (resilience to what ends?);
3. defining the system boundary (resilience of what to what?); and
4. issues of justice and fairness (defining resilience for whom?).

Arguably, there are some additional issues that also need to be considered including: what should be the basis of how people interact with each other, and how should people interact with their places and resources? In other words, what kinds of social relationships between people would

enable resilience? How do they manage the resources they have, and what kinds of meanings do they give to their places of living in order to be more resilient? To address these critical issues and translate resilience into social terms, it is necessary to change the epistemological approach applied from a deductive to an inductive one. Thus, rather than looking at resilience in conventional ways such as by an extended literature review, what is needed is to recognise, observe and describe how resilience actually comes into action in the social world as a spontaneous strategy that local communities put into action in order to cope with, adapt to, and shape change (Berkes et al., 2003; Smit and Wandel, 2006; Skerratt, 2013). This is what we seek to do in our study of post-earthquake rural regions around L'Aquila.

Disasters provide dramatic situations in which affected local communities reveal extraordinary capacities to re-imagine and re-design their structures and processes to survive. Resilience should be understood as being a process, and as a community's ability to take planned action and effect change, i.e. its agency (Magis, 2010). By using the ethnographic accounts of people in the emergency tent camps that were established around the city of L'Aquila following the 2009 earthquake, we demonstrate the agency of local communities affected by disaster, and the high levels of willingness and capacity of people to support each other and enhance their collective wellbeing.

The social dimensions of disasters and persistent myths

Commonly understood, a disaster is the occurrence of an unexpected disruptive event of natural (climatic, geophysical, pandemic disease) or human (environmental degradation, large-scale industrial accident, war or conflict) origin that creates serious consequences for the environment and/or local communities at socio-cultural, economic, psychological, and/or political/institutional/governance levels (Quarantelli, 1998; Perry and Quarantelli, 2005; McFarlane and Norris, 2006; Cottrell and King, 2010). Delving deeper into the meaning of disasters reveals their inextricable social dimension, and several authors have highlighted the importance of situating disasters within the context of socially-produced vulnerability rather than of simple environmental forces (Oliver-Smith, 1998). Disasters thus result from the combination of hazard exposure, inherent vulnerability and insufficient capacity to manage (Khan et al., 2008).

Most studies in the field of disaster studies argue that disasters must be understood in relation to social change: in all their tragedy, disasters offer an opportunity for, and actually demand, the adoption of short-term correctives and long-term adaptations (Quarantelli, 1998; Perry and Quarantelli, 2005). Disasters are first and foremost local (UN-ISDR, 2007), and are complex events and processes that are directly experienced by local communities (Buckle, 2005). Local communities are on the frontline and have to deal with the tragedy and multidimensionality of the consequences of disasters (Oliver-Smith, 1998). Thus, while disasters produce dramatic impacts on the natural, social and built environments, they also force local communities to undergo a great challenge for their own future survival and development. Understanding how to learn from the past is crucial for communities to turn the tragedy into an occasion to empower their ability to react positively, and reduce their future vulnerability to hazards (Dynes, 1998; Perry, 1998; Brockhaus et al., 2013).

This social understanding of disaster has existed since at least the 1982 ground-breaking report of the United Nations Disaster Relief Co-Ordinator (UNDRO, 1982), which, despite being updated in 2010 (DfID, 2010), still remains largely relevant today. An impetus for the 1982 report was a growing concern for the effective participation of locally-affected communities in the decision-making processes of emergency management and recovery operations. The errors and mistakes of past practice led the United Nations to emphasise policies and make specific recommendations for emergency management and recovery around the world.

Unfortunately, much disaster management practice continues to follow old-fashioned and outdated methods. Despite having been debunked many times over past decades (e.g. Wenger et al., 1975; Goltz, 1984; Drabek, 1986; Fischer, 1998; Alexander, 2007; Petersen, 2014), many disaster myths continue to persist in public, political and media circles, and continue to drive the responses of the disaster management agencies in many countries (Nogami and Yoshida, 2014; Nilsson et al., 2016). These myths include (adapted from Tierney, 2003; Tierney et al., 2006):

- the ‘panic myth’ (people can’t be trusted to act in an appropriate way);
- the ‘helpless victim myth’ (people are regarded as being unable to react and must helplessly await outside assistance);
- the ‘collective demoralisation and social disorganisation myth’ (social norms will lose significance and social breakdown will occur);
- the ‘looting and lawlessness myth’ (disaster victims will become lawless, violent, exploitative, and less than human); and
- the ‘abandonment of duties myth’ (public officers will abandon their posts in order to protect their personal interests).

The media plays a major role in perpetuating and amplifying these myths (Goltz, 1984; Wenger and Friedman, 1986; Gantt and Gantt, 2012; Alexander, 2013b). These myths have served to “bolster claims regarding the need for strong command-and-control procedures and for greater involvement on the part of the military in extreme events ranging from homeland security emergencies to disasters of all types” (Tierney et al., 2006, p.63).

Disaster myths are not politically neutral, but rather work systematically to the advantage of elites. Elites cling to the panic myth because to acknowledge the truth of the situation would lead to very different policy prescriptions than the ones currently in vogue. The chief prescription is ... that the best way to prepare for disasters is by following the command and control model, the embodiment of which is the federal Department of Homeland Security. Thus do panic myths reinforce particular institutional interests. But it is not bureaucrats who will be the first-responders when the next disaster, whether brought by terrorists or some other agent, comes. It won’t even be the police or firefighters. It will be our neighbors, it will be the strangers in the next car, it will be our family members. The effectiveness of disaster response is thus diminished to the degree that we over-rely on command and control. This is another case where political ideology trumps good scientific knowledge about how the world works. (Clarke, 2003, p.5).

This mythology is reflected in the Italian national emergency management guidelines, alarmingly entitled “the method of Augustus” referring to the dictatorial rule of Caesar Augustus. Even though the guidelines were produced 15 years after the 1982 UNDRO report, it declared:

The population always feels engaged during a crisis, both emotionally (fear, and a desire to take action to assist those who are affected), and physically (injured, or to be forced to endure hardship). This forced emotional engagement is primarily experienced as feelings of loss and helplessness/powerlessness (impotence). Few people are able to independently develop strategies for emergency response, and the majority of people are in a state of being between the risk of hysterical and irrational panic and an anxious search for help, validation and guidance (a solid point of reference). If the institutional counterpart (opponent) will be sufficiently authoritative and determined, the majority of people will be willing to abdicate their decision-making autonomy, undergo deprivation and restriction of freedom, and become obedient to any given directives. (Galanti, 1997, p.47 author translation with revision to enhance its meaning, noting that the original Italian was hard to comprehend)

These statements reveal a poor impression of the public and a poor conceptualisation of social issues. Solnit (2009) highlighted that elite groups and authorities fear the changes disasters create because they expect there will be chaos and destruction, and an undermining of their power. In disaster studies circles, there is a notion of the ‘panicked elite’, a fear-driven over-reaction which is manifested as the “fear of social disorder; fear of poor, minorities and immigrants; obsession with looting and property crime; willingness to resort to deadly force; and actions taken on the

basis of rumor” (Tierney cited by Solnit, 2009, p.127). Solnit (2009, p.234, paraphrasing Tierney) wrote:

Fed by racism and the enormity of the storm, the elite panic reached extraordinary levels in the aftermath of Hurricane Katrina. That generated a disaster of its own, whereby the victims of Katrina were regarded as menaces and monsters, and the response shifted from rescue to control and worse.

Community resilience in action: learning from post-disaster communities

In stark contrast to the myths and misconceptions, we consider that local communities exhibit extraordinary abilities to be able to react positively and effectively to disasters. They develop a wide range of material, physical, socio-political, socio-cultural and psychological resources to assist them to cope with adversity and distress (Almedom, 2004; Goldstein, 2008; Magis, 2010). Rather than just considering their needs and vulnerabilities, appreciating and utilising the knowhow and abilities of local survivors has redefined the disaster studies paradigm and has led disaster risk reduction work to switch from the idea of ‘disaster-prone communities’ to consider ‘disaster-resilient communities’ (Coles and Buckle, 2004).

The intimate connections between disaster recovery and the resilience of affected communities have become common features of disaster risk reduction programs since the adoption of the Hyogo Framework for Action 2005-2015 (UN-ISDR, 2005). Understanding the construct of ‘community resilience’ means, first of all, to comprehend the term ‘community’, and then to understand how ‘resilience’ is created by communities (Coles and Buckle, 2004). Although there are many different definitions, in the context of disaster preparedness and recovery, ‘community’ typically refers to something along the lines of “an entity that has geographical boundaries and shared fate ... composed of built, natural, social, and economic environments that influence one another in complex ways” (Norris et al., 2008, p.128). Coles and Buckle (2004) emphasise the local, voluntary and self-organizing nature of communities, which are comprised of people who have skills, resources and organizational capacities to be able to provide services to people at risk, and whose interests are not limited only to the immediate disaster response.

Resilience also has a wide range of definitions, however, it is broadly recognised that resilience, when applied to human systems, is best conceptualized as a capacity and process rather than as an outcome, and closer to the evolutionary and social-ecological resilience perspectives than to engineering resilience or to any equilibristic theory. Rather than as a force that makes the system return to its pre-designated state or function, in social terms resilience should be understood as the complex of social survival processes that local communities put into action in order to collectively respond to the negative social and economic impacts caused by a disturbance. There are various definitions of community resilience, for example “the ability of community members to take meaningful, deliberate, collective action to remedy the effect of a problem, including the ability to interpret the environment, intervene and move on” (Pfefferbaum et al., 2007, p.349). Norris et al. (2008, p.131) defined it as a “process linking a set of networked adaptive capacities to a positive trajectory of functioning and adaptation in constituent populations after a disturbance”.

In this paper, we suggest that recognising the networked and cooperative agency of actors can help in understanding community resilience. Rather than seeing resilience just as a set of community capacities, assets or capitals, it should be seen as a complex of social processes that allow local communities to self-organize and enact positive collective action for community survival and wellbeing. We explore how community resilience comes into action among survivors of a disaster by looking at the 2009 L’Aquila earthquake.

Methodology: an ethnography of the L'Aquila earthquake

This paper is part of a larger research project. In effect, the research commenced immediately after the 2009 earthquake that devastated the City of L'Aquila and surrounding rural villages in the Abruzzo region of central Italy, about 100 kms east of Rome. The fatal earthquake occurred at 3.32 in the early morning of Monday 6 April 2009. Our observations are partly drawn from reflection on the lead author's active role in the immediate aftermath of the earthquake; from his participant observation of life in the tent camps in the ensuing days, weeks and months; and from subsequent in-depth and field interviews with camp staff, officials, and local residents. For the project as a whole, a multi-methods approach was utilised combining auto-ethnography (Ellis et al., 2011), ethnography, participant observation, field notes, in-depth interviews, personal experience, photo analysis, document analysis, media analysis, and analysis of digital media (e.g. blogs written by survivors), to provide an account of the social interactions that occurred and that allowed community resilience to emerge.

The primary author is an Italian citizen and a resident in the L'Aquila region for most of his life. He was present in L'Aquila city on the night of the earthquake. He was and remains well integrated in the L'Aquila community and has close personal connections to many of the key actors, which enabled him to have unparalleled access for this social research. Being fortunate to emerge unscathed after the earthquake, like most other survivors he immediately engaged in assisting the people around him, wherever help was needed. As a reflexive scholar and practitioner, in the days after the earthquake he began taking notes of his experiences and of what he witnessed. In his role as a volunteer organiser of community arts events, he developed ideas and plans for the action he could take in social reconstruction in the tent camps. In order to plan appropriate artistic initiatives in the camps, he developed a way of monitoring social conditions. This enabled him to collect data from the majority of the 176 tent camps that were established.

The data for this specific paper derive particularly from the following: participant observation conducted in the camps; various discussions with government officials, camp chiefs and external volunteers such as psychologists and the coordinators of recreational activities; and subsequent in-depth interviews with people who lived in the camps and other key actors. Notes were taken for the time he spent living in the camps, with entries being made on most days. In addition to multiple extended discussions with several professionals (see later in this paper), between 2013 and 2015, 17 formal in-depth retrospective interviews were conducted with a range of local people who had played various roles in the camps. These interviews were recorded and subsequently transcribed. Informed consent (Vanclay et al., 2013) was obtained for these research interviews.

The primary topic discussed in the retrospective interviews related to the functioning of the self-organised camps – specifically what were the social mechanisms that enabled the camps to survive collectively. Personal reflection notes were taken after each interview and the transcripts were subsequently annotated by noting key themes that emerged. It was because certain key social issues came through very strongly in most if not all interviews that our interest in community resilience in action developed. The things that were frequently said by our participants included: an overriding sense of responsibility to help others; the strong feeling of experiencing empathy for others; the solidarity that emerged from sharing sorrow and pain; the immediate concern about the wellbeing of the elderly and children (irrespective of who they were), and the need to collectively care for them; the obviousness of sharing resources no matter how limited; and the joy of cooperation in doing collective tasks, even in the face of tragedy.

All interviews were done in Italian. For this paper, some extracts from the interviews were translated into English by the primary author, with some adaptation by the native English speaking co-author. During the writing process, some issues were verified by re-contacting the

original sources – some of whom were or had become good friends. We note that because of the autoethnographic and participant observation dimension to the research, the lead author was able to witness many local people spontaneously devoting their time to helping others inside and outside the tent camps. Although we would like to tell many of these stories, space limitations mean that only some examples of community resilience in action can be mentioned. Similar to most significant change technique and performance story reporting approaches (see Vanclay, 2015), the stories chosen were those that best exemplify the concept of community resilience in action, and are also indicative of the general response from most people. Out of respect for and in solidarity with our research participants, unless they are introduced anonymously we have used their real names – with their permission and personal preference.

Some background information

At 3.32 a.m. on the 6 April 2009, the area surrounding L'Aquila, the capital city of the Abruzzo region in central Italy, was devastated by an earthquake measuring 6.3 on the Moment Magnitude Scale (5.9 on the Richter Scale), killing 309 people¹, injuring some 1,600 people, and displacing more than 70,000 people. In addition to destroying the historic city centre of L'Aquila, the historic centres of more than 80 villages (across 57 municipalities) were also destroyed. The area of destruction is known as 'the crater'.

The 6 April earthquake was preceded by thousands of tremors starting from mid December 2008 and progressively increasing in intensity. Data from the website of the Italian National Institute of Geophysics and Volcanology revealed there were over 80 earthquakes greater than 1.5 (Richter Scale) and 38 greater than 2.0 in the four months prior to the fatal earthquake. Significant earthquakes were also experienced on 17 March (3.6), 28 March (3.8), 30 March (4.1), 5 April at 10.48 p.m. (3.9), and 6 April at 00.39 a.m. (3.5). Following the fatal earthquake, aftershocks continued to be experienced for several weeks afterwards, causing further damage and anxiety.

A few hours after the fatal earthquake, the then Prime Minister Silvio Berlusconi declared a state of emergency giving a range of abnormal powers to the Department of Civil Protection (DCP) and suspending various civil rights and procedures. A Department of Command and Control (Di.Coma.C.) was created establishing its operations in the buildings of the training school belonging to the Italian Finance Police (IFP) in Coppito, a suburb some 5 kms from the centre of L'Aquila. With the powers granted to it by the state of emergency, Di.Coma.C. became the extraordinary government over the crater (Alexander, 2010, 2011, 2013c). All devastated village centres and much of L'Aquila city were declared 'Red Zones', from which all civilians were excluded, initially by military personnel, and later by the construction of fences together with military patrols.

Immediately after the earthquake in the darkness of night, in L'Aquila city and surrounding villages, local people helped each other as much as possible. Local emergency services did what they could amongst all the destruction, with most city streets blocked by rubble. A national call-up of DCP volunteers commenced, and by dawn and in the coming days thousands of volunteers descended on L'Aquila to assist in the massive emergency response and clean-up operation. Most of the attention focussed on the City of L'Aquila. The DCP immediately began establishing emergency tent camps for the tens of thousands of people likely to be left homeless. We call these the DCP camps. The rural and mountain villages, however, were largely forgotten or ignored by the authorities, and in some cases were cut-off from the outside world by debris for many days afterwards. With the inherent resilience and resourcefulness of rural communities everywhere,

¹ Some official sources state 308 deaths, others say 309. This discrepancy relates to the fact that one victim was at a very late stage of pregnancy at the time of the earthquake.

rather than wait to be helped, people in the small villages organised their own emergency housing arrangements using their own resources that were at hand. We call these the self-organised camps.

One of the first actions of Di.Coma.C. was the total evacuation of L'Aquila city and surrounding towns. Within 20 days, the region's population had been split into three groups: some 34,000 people were assigned to hotels and other accommodations along the Abruzzo coast (on the Adriatic Sea) and other cities in Italy; some 29,000 were assigned to the 176 emergency tent camps that were established across the Province of L'Aquila; and some 13,000 decided to fend for themselves by seeking their own accommodation with friends or relatives in the Abruzzo region and throughout Italy.

The state of emergency powers meant that all rights of public participation were suspended, and the normal requirements for public procurement did not have to be followed. Although the state of emergency was originally intended to be for a fixed term of 6 months, Prime Ministerial decrees of 17 December 2010 and 4 December 2011 enabled it to be continued. With Italy having a change of government in November 2011 (to the technocratic government of Mario Monti), a decree of 22 June 2012 (no. 83) meant that the state of emergency finally ended on 31 August 2012. Actions previously decided under the state of emergency powers, however, were allowed to continue to be implemented. All communications pertaining to the state of emergency were regarded as state secrets and continue to remain so. Under the guise of the state of emergency, major transformations were wrought upon the landscape and people of L'Aquila, including: the implementation of extensive (and some say excessive) safety barriers and bracings; the construction of highly-controversial and expensive emergency housing; the removal (some say theft) of rubble (including the heritage stones and historic timber planks that local people might have wanted to keep for their own reconstruction efforts); the demolition of people's buildings and removal of debris without their permission (thus denying them the ability to undertake any salvage actions); the commencement of the reconstruction process (which will continue for many years); and the undertaking of some highly controversial public works projects without consideration of financial, environmental or social considerations (Alexander, 2010, 2013c).

Like many rural areas in Europe, the Abruzzo region has been facing declining economic performance, an ageing population, the outmigration of young people, and a declining industrial sector (OECD, 2013). Population decline and a high rate of 'coastalisation' (Salvati and Forino, 2014) have led to a territorial polarization that has especially affected Abruzzo's inland and mountain areas. The area surrounding L'Aquila has a mixed economy combining traditional agriculture and pastoralism, viticulture and wine-making (especially noted for Montepulciano d'Abruzzo), manufacturing, tourism, and knowledge-based industries. There are three large national parks: Gran Sasso e Monti della Laga; Majella and Sirente-Velino. It is a region of considerable natural beauty and cultural heritage, especially its medieval hill towns. There are universities in L'Aquila, Teramo and Pescara-Chieti, with a total of 60,000 students. There is also a highly-significant scientific research facility, the Gran Sasso Institute. Although once a site of industrial innovation, the economy of the region has been slowing down over the past decade or two (OECD, 2013). At the socio-political level, the region is regarded as being within the *Mezzogiorno* (i.e. southern Italy) and there has been a high level of corruption (Libera, 2010). To some extent, therefore, L'Aquila might be perceived as being more vulnerable to the impacts of an earthquake or other disaster than other regions. An extensive analysis of the economic and social context of the Abruzzo region and the implications of the earthquake are provided in the OECD (2013) report, *Policy Making after Disasters: Helping Regions Become Resilient – The Case of Post-Earthquake Abruzzo*.

It is very evident that the top-down, command and control approach Di.Coma.C. employed was inefficient and ineffective, and that large sums of money have been wasted (Alexander, 2010, 2013c; Venturini and Verlinghieri, 2014). There have been concerns about corruption and the

role of organized crime, with several inquiries being conducted (OECD, 2013; Søndergaard, 2013). Nevertheless, despite the potential for the command and control approach to extinguish community initiatives, there are myriads of examples where community resilience flourished in the L'Aquila situation, some of which we describe below.

Examples of community resilience in action at the grass roots level

Following the earthquake, many people were pinned under collapsed buildings or suffered injuries. Most of those who escaped unharmed went around offering help wherever they could. In the immediate aftermath of the earthquake, people helped each other and organized themselves collectively to rescue other people from the rubble, to cope with grief and sorrow, to deal better with the tragedy and loss, and to survive and rebuild sociality. Many people felt an instinctive feeling of solidarity towards their neighbours. Many lives were saved by the many simple and unexpected collective actions made by normal people who immediately begun to rescue others, digging through the rubble and pulling out injured people and bodies. Others immediately self-organized themselves to find creative solutions to be able to rescue people in danger, e.g. getting ladders or making knotted sheets to use as ladders. A woman from Onna (a village some 5 kms from L'Aquila) said:

During that night when we were still amid the chaos, there were several guys from our village who escaped unharmed and they were walking around between the rubble, shouting and calling out, asking if anyone needed help. Wherever they heard voices under the rubble, these guys immediately began to dig through the ruins, rescuing many lives. Where they could give their help, they gave it. ... The instinct to help others was strong: I remember the reaction of my husband ... he absolutely needed to go out and help his neighbours. My daughter was the same.

Impressive examples of empathy and instinctive feeling of solidarity also occurred in front of the San Salvatore Hospital in L'Aquila (Spila, 2009). Many examples can be mentioned – solidaristic communities arose as a normal response to the tragedy. After a disaster there is an extraordinary ability among survivors to spontaneously rebuild, through empathy, a common sense of being together. This allows people to deal with grief and sorrow. Marco Marrone said:

The next day [i.e. later on 6 April] I wanted to escape. I had a time of crisis: you start to look at your mobile phone, then you try to call [your friends] and when they do not answer you, you start thinking the worst. Then you receive the confirmation [of their death] and your world falls apart. One of my classmates died and also some friends of mine, and I was really shocked about that. Nevertheless, being together [in the camps] helps you – while you are working with others you do not realize the time passing.

Carlo Daniele, an inhabitant of San Nicandro, a rural village 22 km from L'Aquila, said (slightly re-worded):

In only thirty seconds, an earthquake can wrought terrible destruction. It is in these terrible moments that we have the ability to experience the power of nature, the '*vis medicatrix naturae*'. You discover yourself completely naked in front of it, you realize that you do not have anything, and that you are just 'manure for flowers'. The negativity of grief and sorrow has been alleviated – but not deleted altogether – by the solidarity that has spontaneously grown among us. The act of experiencing the same tragedy and a common dramatic condition as others has made us appreciate the suffering of other human beings, and this has nourished the spirit of serenity among us.

These stories reflect what Solnit (2009, p.3) wrote: "When all the ordinary divides and patterns are shattered, people step up ... to become their brothers' keepers". In L'Aquila, responses based on empathy and instinctive solidarity were widespread – in stark contrast to the disaster myths or the images of jackals and looting that were perpetrated by the press. This empathy and instinctive feelings of solidarity was also widespread at the national level, with thousands of volunteers from all over Italy coming to L'Aquila to help.

In some mountain regions, huge boulders were dislodged by the earthquake and bounded down the mountainsides onto the roads and mountain passes below, making them impassable. In some cases, these boulders and landslips remained in the middle of the roads for up to one month impeding access to the villages in those regions. Due to the urban priorities of the DCP, many rural villages did not receive organised support from the DCP for up to 20 days after the earthquake. Instead, these communities received support from the spontaneous networks of solidarity created by the relatives, friends and colleagues who came from all over Italy to give help. These spontaneous networks emerged because of the ability of local communities to autonomously activate their own communication networks and provide relevant information about what assistance and equipment were needed. In the first days after the quake, these networks were more effective than the official support in supporting the needs of affected people. They were able to reach the remote areas far away from the media and political attention long before the DCP got there. They brought food, clothing, first aid requisites and requested medication, and basic household items like plates, glasses, dishes, as well as soap, camping gas cylinders, washing machines, fridges, and whatever else was needed to make do in the new situation. Despite the devastation, most people did not want to leave the rural communities in which they lived.

An ‘aftershock economy’ emerged in local communities. Collective outcomes were achieved through cooperative initiatives by using common resources, by sharing, the exchange and giving of gifts, and by leaving narrow personal interests behind. People in these aftershock communities immediately shared their food reserves. They built common kitchens and self-organized themselves with an enthusiasm and sense of community that was new for many of them. In the villages where people self-organized their own camp life, everyone tried to be as helpful as they possibly could: from erecting tents, cleaning toilets, cooking, and doing the washing-up (see Figures 3.1, 3.2, 3.3 and 3.4).



Figure 3.1: The self-organised camp at Tussio.

The shed (a chicken coop) had been cleaned up so it could serve as a group kitchen. This site was chosen because it was near their village, and was a wide open area where the people would feel safe. Photo by Gildo De Rubeis taken a few days after the earthquake, April 2009.



Figure 3.2: Eating together at Tussio.

Taken at the same time as Figure 1, a few days after the earthquake, here we see the residents about to enjoy a group meal. The village of Tussio is in the background. The houses are not visibly damaged but were potentially unsafe often having much internal damage. With the frequent aftershocks, people were very much in fear of more earthquakes and so preferred to be outside. For the first several days after the 6 April, the people here slept in their cars. Photo by Gildo De Rubeis, April 2009.



Figure 3.3: Doing the washing up at the San Giovanni self-organised camp.

The chores people did brought about a positive spirit of togetherness. Photo by Marco Marrone, early May 2009.



Figure 3.4: Making the morning coffee in the makeshift kitchen at Capestrano.

Photo by Marco Mendez, taken 15 April 2009.

These social activities and interactions facilitated positive changes and enhanced everybody's wellbeing. These examples of community resilience in action were not restricted to pre-existing groups, but were a natural way rural communities responded, putting their resources and interests in common, and self-organizing their own camp life. The people of San Giovanni displayed many examples of community resilience in action, for example, by constructing a facility so they could have hot showers, establishing a common kitchen by converting a pigpen (the only building still standing), and creating a collective laundry. As Sergio Marrone, an inhabitant of San Giovanni, explained (slightly modified):

My sons built a shower with hot water for our camp. They got a big tank which could be filled with water. They put it on a gas cooker to enable the water to become hot. Using a pump, they piped the hot water to the inside of a nearby tent where there was a large plastic tub in which all people – including children and the elderly – could take a shower. Nearby, we put some bathrobes. Four days after the earthquake, our self-made shower system was already operative! (see Figure 3.5)

When the DCP finally established a tent camp for the San Giovanni community, the community members discovered that the site was not suitable. Taking responsibility for their own living arrangements, they re-established the tents on ground they had prepared by laying down gravel for better drainage (see Figure 3.6):

The Civil Protection eventually gave us tents erecting them on bad ground so that when it rained it became completely muddy. ... We moved the tents to another spot, terracing it, and making it porous with gravel. We then built a wooden enclosure around our camp to safeguard us from wild animals. (Sergio Marrone)



Figure 3.5: The hot water shower tent at the self-organised camp of the San Giovanni community. Photo by Marco Marrone, taken 9 May 2009.



Figure 3.6: The San Giovanni community preparing the foundations for their tent site. Using machinery and gravel provided by some of the residents, here the San Giovanni community prepares the site to which they will move the blue DCP tents. Photo by Sergio Marrone, taken early May 2009.

In the tent camp, private space and television no longer played their normal central role in daily life. Instead, people shared personal experiences, discussed the problems they collectively faced, discussed politics and strategies, as well as played games, and laughed and cried together. A positive atmosphere was created amongst these self-managed camps in the small communities: “it was an atmosphere of cooperation, of candour, of naturalness”. As Sergio Marrone said: “We became a huge family, and ever since we continue to strengthen our relationships by sharing our troubles as well as the good things. In the three years since the earthquake [this interview was conducted in 2012], we have not lost this treasure – we still meet each other, spending Christmas and the end of the year all together”. At the time of writing this paper (2015), the San Giovanni community still spends these times together.

Aftershock societies developed, fostering brotherhood, naturalness, candour, simplicity, open-handedness, and joyfulness. This environment enabled community resilience to come into action and flourish. For example, in the Tussio self-organized camp, Giuseppina Carosi said:

One beautiful thing I remember about those days was being together inside the tent. In the evening we went to bed together, we talked, we laughed, and we thought that when we would have to go back home, we would miss these beautiful tents, these beautiful little tales, this laughing, this being together. In fact, that exactly happened to me, and the same experience happened to many friends of mine: as soon as we left the tents and we went back home, we felt alone and we were left only with this memory of being together – but that is still a beautiful thing.

Solnit (2009, p.3) highlighted how this purposefulness and connectedness that arises in the aftermath of disaster brings joy “even amid death, chaos, fear, and loss”. She suggested the transformational possibilities that can occur and stressed the need to rid ourselves of the disaster myths.

The astonishing gap between common beliefs and actualities about disaster behaviour limits the possibilities, and changing beliefs could fundamentally change much more. Horrible in itself, disaster is sometimes a door back into paradise, the paradise at least in which we are who we hope to be, do the work we desire, and are each our sister’s and brother’s keeper.

Examples of community resilience in action at the level of local professionals

Here we consider the role local professionals in the L’Aquila region played in the aftermath of the earthquake showing that, in stark contrast to the abandonment of duties myth, most local professionals went well beyond their normal responsibilities to make significant personal contributions to the collective wellbeing. We highlight the role of professional and personal responsibility and suggest these attributes provide a basis to consider alternatives to the command and control perspective typically displayed by institutions. We argue that after a disaster, social responsibility becomes widely distributed among and accepted by members of the affected local communities. Building on initial feelings of empathy and the instinctive feelings of solidarity, local people typically respond to disaster situations by doing whatever they can wherever they consider they can make a personal contribution. *What am I able to do?* and *How can I be useful?* are common questions people ask themselves and that lead local practitioners to: feel professional and personal ethical responsibility; to realise that the social usefulness of their profession; and to make themselves available and contribute to the broader social good with an attitude that it would be inconceivable to do nothing. This immediate jumping to action is in strong contrast to the frequent delays in the institutional response, both in terms of a realisation of responsibility and in institutional action.

In L’Aquila, many local professionals jumped immediately to action responding to the needs of their community, putting their own personal interests aside in order to help others. Although we could tell many such stories, by way of indicative examples we tell the stories of three local

professionals: Dr Pierluigi Imperiale, the local chief veterinary officer; Dr Alessandro Sirolli, the director of the Psychiatric Day Centre (outpatient facility) of the local Mental Health Department; and Dr Romeo Pulsoni, a local general practitioner (family doctor). These individuals, who were earthquake victims in their own right, showed leadership, courage, and conviction of purpose in responding to the crisis and going out of their way to improve the lives of those around them.

To contextualise their stories, some further background information is needed. Just after dawn on the morning of the earthquake, some senior DCP staff did a quick aerial survey by helicopter to assess which buildings were intact and could be used to house emergency operations. They decided the most suitable buildings were those of the Italian Finance Police (IFP) school in Coppito, a suburb 5 kms from the centre of L'Aquila. This location immediately became the focal point of coordination, with Di.Coma.C. establishing its offices there. Word of mouth and radio announcements led several local professionals to present themselves to this location to offer their services.

The response of local professionals I: Dr Pierluigi Imperiale

On the night of 5 April, Dr Pierluigi Imperiale, the chief veterinary officer for L'Aquila, was asleep in his village, San Nicandro. He was awoken by the earthquake. Realising what had happened, he immediately decided to go to L'Aquila city to check on his elderly mother. On his arrival in L'Aquila, he found her in the street. With the buildings all around collapsed, he decided to bring her back to his village. On the way back to San Nicandro, he stopped in Onna to check on other relatives. He realised that there were people in Onna who needed immediate help. Along with the many other people out in the streets helping, he spent an hour or so helping whoever he could. He then brought his mother to his home in San Nicandro. Feeling a strong sense of duty, he then decided to return to L'Aquila. Listening to the car radio on the way, he heard that he should go to the IFP school.

By 7.30 a.m. around 15 professionals from various agencies had arrived at the IFP school. Clustering according to their professional expertise, some 'decision-tables' were organised according to different public functions including on 'transport', 'safety and public works', and 'public health'. The one on public health comprised two DCP officials plus Colonel Giuseppe Rinaldi (the doctor for the IFP school), Dr Lanfranco Venturoni (the Abruzzo regional councillor with responsibility for health), and Dr Pierluigi Imperiale (L'Aquila's chief veterinary officer), the highest ranking officer of the local Public Health Department present.

The first considerations the public health decision-table had to address were towards the people still alive – specifically to make arrangements for the care of all people hospitalized before the earthquake and who, given the damage to the L'Aquila hospital, would have to be moved elsewhere. A second issue was to plan first aid services to provide an adequate response to the vast number of people with injuries coming from all over of the crater. On these matters there were different views among the professionals around the table. The councillor proposed moving all the patients to the nearest equivalent-sized hospital, which was in Teramo (some 50 kms away on the other side of the mountain). Conversely, the local professional, Dr Imperiale, proposed “a more rational and less political solution” to distribute the patients across all the medical facilities in Abruzzo and neighbouring regions according to the availability of transport, with patients allocated on the basis of the level of urgency and the consistency of their medical needs with the expertise available at each hospital. The decision-table endorsed Imperiale's suggestion, and within a few hours the ambulances and helicopters needed to put the plan into effect were dispatched.

Concerning first aid operations, the DCP interest was to identify where they could locate their *Posto Medico Avanzato* (PMAs or field medical centre). They first thought it would be best to

place two big PMAs in a public square in the very centre of L'Aquila. However, during the discussion, the local professional, Dr Imperiale, was concerned to ensure there was an adequate awareness of the likely spontaneous reactions of local people (i.e. in terms of where they would go to seek help). He argued that, even though the L'Aquila hospital was partly destroyed, local people would still likely go there first to get assistance. Eventually he convinced the decision-table, and the first PMA was established in front of the L'Aquila hospital. Imperiale was proven to be right. During the 6 April and in the days afterwards, over a thousand people (some injured, some accompanying relatives, and some people with their deceased) arrived at the hospital from all around. This first PMA was a success partly because of consideration of local knowledge in the decision about where it should be located. Imperiale also suggested that all subsequent PMAs should be placed in a ring some 5 to 10 kms out of the centre of L'Aquila to ensure assistance to L'Aquila inhabitants and to those people living in the many surrounding rural villages.

Other considerations the public health decision-table had to address related to the deceased. Because the mortuary at the L'Aquila hospital was no longer serviceable, they had to decide what to do with the few corpses that were in storage before the earthquake. They also needed to consider how they would accommodate the hundreds of bodies that were being discovered amongst the rubble and that would come forward in the course of the coming days. Dr Imperiale and Colonel Rinaldi decided to establish a temporary mortuary in the Big Vehicles Garage of the IFP school. With the local mortuary staff out of service, there was an urgent need for someone having the knowledge of what to do and the fortitude to cope to fill the role of mortuary director. Imperiale realised it had to be him – that he was the only one who could do this job properly, given that he had the necessary equipment at his disposal, appropriate medical knowledge, and the personal humility that the role deserved.

Using equipment from the veterinary service, Imperiale and a colleague disinfected the garage to prepare it for its new function as a mortuary. He established a controlled area around the mortuary to filter people at the entrance and to keep the press and journalists away. He coordinated the staff of the State Forestry Corps and the IFP officer cadets who were stationed at the entrance to the mortuary. He also liaised with the three branches of the Italian police (*Carabinieri*, *Guardia di Finanza*, and *Polizia*) who were each making their own coronial report for each deceased person. Imperiale extracted the data from their reports and organized them into a database allowing a quicker identification process. This avoided delays and errors, which would have caused much stress to relatives. Aware of the confidentiality and intimacy of the job he was doing, and without regard to the hours it took, Imperiale worked continuously (i.e. without sleep) at that mortuary from midday on 6 April till the night before the State funeral (which was on 10 April). Each day at 6 a.m. and 7 p.m., he delivered an update to the DCP headquarters to provide accurate information about the official number of deaths for distribution to the local, national and international media. In only three days, all 309 victims were identified.

Imperiale's work in the mortuary ended after the State funeral on 10 April. After this, he went back to lead the local veterinary service. The veterinary service staff, each feeling a sense of duty had autonomously returned to work on the day of the earthquake, attending to the local kennels, providing veterinary services as requested to the many animals that were also injured, and undertaking missions to rescue people's pets. Over the months that followed, Imperiale and his staff undertook an extensive program of disinfecting the 176 camps, carrying out more than 400 night-time missions.

The response of local professionals II: Dr Alessandro Sirolli

On the morning of the earthquake, the director of the Psychiatric Day Centre (outpatient facility) of the local Mental Health Department (MHD), Dr Alessandro Sirolli, and his colleague and spouse, Dr Noemi D'Addezio, a psychologist, on seeing the devastation and suffering around

them, considered that they had to do something – doing nothing was inconceivable. They went to the Centre to see what state it was in. Seeing the extent of the destruction, they decided to take the Centre's work vehicle and extracted it from the damaged garage. They considered that the MHD signs on the car might lead to recognition of them as professional healthcare workers and allow them a level of access that might be otherwise difficult. Sirolli phoned the MHD Director, while D'Addezio phoned the president of the regional professional association of psychologists, both asking what they might do to provide assistance. They were told that the IFP school was the coordination point, and so at around 8.30 a.m., Sirolli and D'Addezio went there to offer their services.

At the IFP school, they discussed with a DCP official what they could do to help. It became evident that what was needed was to provide assistance to the relatives of the deceased who were gathering outside the temporary mortuary being established there. As can be imagined, there was much grief everywhere. Sirolli and D'Addezio realised that counselling and emotional support would be needed. The question was how that could be provided. Looking around, they saw groups of people and families, but also some lone individuals in search of their loved ones. Sirolli and D'Addezio decided to adopt a discrete and informal approach, facilitating discussion to help people express sorrow, and cope with their grief. They spent many hours that day outside the mortuary talking to people, hearing their personal stories, and providing psychological support, especially by accompanying people during the emotional process of confirming the identity of the deceased.

The next day (7 April), Sirolli met with Dr Vittorio Sconci, the MHD director, to find temporary accommodation for the patients previously hosted in the MHD facilities. Within a few hours, they found a solution in Celano, a small city 66 kms away. Using MHD transport, they arranged for the 40 or so MHD patients to be moved there. They also began to consider the camps DCP was establishing in the crater. On 8 April, they opened a mental health coordination centre inside a tent in one of the first DCP camps near L'Aquila city. Sconci and Sirolli decided to relocate the patients who had been moved to Celano to that camp, together with other MHD patients, so that their care and medication could be reinstated, and so that they would be near their families. Another concern for Sirolli was to establish what had happened to the MHD outpatients (about 200 people). It was important to ensure that these outpatients continued to be properly looked after and not disadvantaged by their psychological condition. Sirolli coordinated his staff and some local and other volunteers (typically medical or psychology students) to search for them. They divided the crater into districts, assigning a team of three to four people to each district. The teams would explore the camps in each district, searching for their patients, and liaising with the PMAs that were being established. A database was also created. Thanks to the extraordinary work of the many volunteers, within one week Sirolli had a comprehensive overview of the disposition of all outpatients.

In the camp, Sirolli and his staff established a caring and inclusive environment where the MHD patients would feel part of camp life along with the 1,100 other people who also had taken refuge there. However, the MHD experienced some opposition from DCP officials who asked the MHD to move their coordination centre and MHD patients to a separate camp exclusively for them. Sirolli and Sconci vigorously objected and, after much discussion, were able to get the DCP to understand their perspective and treatment methods.

In the weeks and months that followed, Sirolli and the MHD staff were able to build the conditions to facilitate healthy relationships between MHD patients and other people living in the camp. MHD patients lived side-by-side with other families. Again, a discrete and informal approach was adopted. They decided to not wear uniforms. They considered that uniforms would create a barrier and impede their ability to be near people and connect with them in their camp life. The

integrated camp continued in a harmonious and inclusive way through to November 2009 when alternative accommodations became available and the camps were no longer needed.

The response of local professionals III: Dr Romeo Pulsoni

The evening following the earthquake, in the outskirts of L'Aquila, Dr Romeo Pulsoni, a local family doctor (general practitioner), came across a group of DCP volunteers from the Lombardia region. They were wondering where to establish a field medical centre (PMA). Reflecting on the geography of the crater and the possibility that many injured people would likely travel from their rural villages to the L'Aquila hospital, Pulsoni realised this would cause dangerous traffic congestion in the L'Aquila city centre. He suggested that the Lombardia DCP should establish their PMA in Monticchio, a gateway village 10 kms to the south-east of L'Aquila. The PMA would then be in a strategic position to filter survivors coming from the surrounding villages, thus avoiding congestion in L'Aquila city.

Pulsoni also realised there was an urgent need for family doctor services to be re-established. He had observed that the PMAs were very efficient, but were limited in number and mainly dealt with emergency needs according to the classic medical triage system. This institutionalized method of patient care created many queues and led to long waiting times for people with non-serious conditions. He realised that these people, although not 'in danger', often had other immediate needs not recognised by the triage system. For example, they may have to go back to their own destroyed homes to collect their pills for epilepsy, or their medicine for diabetes. There were those who needed crutches, or other necessities. Another issue was that many people had splinters or shards of glass or other building materials in their bodies that came from the disintegrating buildings at the time of the earthquake or from subsequent rescue operations. Although not life threatening and therefore not a priority in the triage system, these injuries could be distressing and painful, and they potentially limited people's mobility. He realised there was a real need for more first aid care to be provided, especially for the many people with non-critical conditions. Pulsoni also realised that, for many people, the local family doctor was the only person they felt comfortable in talking about their medical concerns. Furthermore, local family doctors with their own databases and personal knowledge often knew each person's problems and medical history. This was especially important because the regional online medical database managed by the hospital was no longer functioning and therefore there was little medical history available. Therefore, on the morning of the 7 April, Pulsoni asked the DCP for a tent so that he could re-establish his own medical practice. He also phoned most of the doctors in L'Aquila to ask them to join him in going back to work.

Word got around and within one day many volunteer doctors came from all over Italy to ask Pulsoni how they could help. Pulsoni was able to commandeer 10 ambulances. He divided the volunteers into 10 teams to which he assigned a map with a specific route they had to follow to service the many villages in the region. The first issue he had the teams address was to monitor the conditions under which the survivors in each community were organizing themselves – to identify their needs and analyse the sanitary conditions of each self-organised camp that people everywhere had established close to their destroyed villages. He provided each team with a survey they had to complete with specific questions related to: camp conditions (number of people, number of volunteers, number of tents, presence/absence of a PMA, distance from the nearest hospital, technical needs concerning water, electricity, children's needs, showers, and so on); health services (presence/absence of a doctor, number of hours covered by the health care service, other doctors and shift details, and any health care needs that were detected); and the availability of pharmaceutical supplies (presence/absence of a pharmacy, and specific requirements for any drugs). He also required them to provide a brief hygiene-sanitation assessment of each camp in terms of the adequacy of drinking water supply; the functioning of septic tanks; the maintenance (cleaning and disinfecting) of toilets; food storage conditions; and related matters. They would

also address any immediate medical and practical issues they came across. After several days, Pulsoni had a comprehensive overview of the health context of all the local communities around L'Aquila. From this he could coordinate the aid being provided by the various humanitarian organizations.

When the DCP learned of Pulsoni's activities, they attempted to restrict his functions, but recognising his value they also made him responsible for some tasks. In his now official role, Pulsoni accomplished many things. He recalled all employees of the local public health service and fully re-established its activities. He was able to fully reactivate the regional medical database. By determining official protocols, Pulsoni outlined the healthcare and hygiene rules each camp chief had to follow. He established a roster system for family doctor and healthcare assistance in the camps of the rural villages. He organized local health staff to provide adult education courses on food safety (HACCP) to DCP staff who were working in the camp kitchens. Later on, he asked the Vice-Prefect to issue a decree to prevent the field medical centres (PMAs) from operating in the tent camps after 25 July 2009 in order to reduce the activities of external organizations and thereby enable local professionals and agencies to become fully re-established. Finally, during the 2009 Ramadan (20 August to 19 September), he ordered the DCP to respect the cultural traditions of Muslims living in the camps, explaining to them the significance of Ramadan, and asking them to respect the rights of Muslims and accommodate their religious needs (e.g. by changing mealtimes so as to meet the fasting requirements of Ramadan).

Understanding resilience in social terms

The stories of people who lived for a time in the self-organised camps near the rural villages around L'Aquila as well as the stories of the professionals in responding to the call to duty reveal the vast extent of underlying capacity and resources that exist within communities. When these latent assets are activated, community resilience comes into action. Analysing our stories and the conditions that gave rise to the activation of these capacities helps to understand what community resilience in action actually is. Below, we use the four critical issues Davoudi (2012) identified (introduced earlier in our paper) as a framework for discussing how community resilience comes into action. We note that community resilience is a multi-dimensional phenomenon, and that its different components are intertwined and interconnected.

1. The intentionality of human actions (how can resilience be built and counter-productive actions avoided?)

Community resilience occurs through and is influenced by the willingness of people to take action (Davoudi, 2012). We observed that the actions of people in resilient communities are driven by strong feelings such as empathy, solidarity, and a sense of social responsibility and public duty. These driving emotions are triggered and reinforced through cooperative actions and the social interactions among members of a community. No longer having a place to live and being aware of the collective tragedy brings people to reflect on their overall community wellbeing, the immediate need to have a place to live (together), and the need for them to organize their social and community life to protect, support, nourish and encourage each other. Post-disaster situations and other crises provide community members with opportunities to identify the problems they collectively have to address. Rather than any counter-productive action or anti-social behaviour, we observed that the shared need to find solutions to common problems brought about positive, cooperative behaviour. We consider that this working together for the common good is indicative of the intentionality of human actions in resilient communities, and we argue it will naturally emerge in periods of crisis as community resilience in action. Thus, in stark contrast to the disaster myths, there was no wide-scale perverse behaviour or counter-productive actions, except perhaps

by elite groups (Alexander, 2010; OECD 2013; Søndergaard, 2013; Venturini and Verlinghieri, 2014).

2. The goals and outcomes of resilience for local communities (resilience to what ends?)

Reflecting on our stories, it was apparent that the desirable outcomes created by having greater community resilience would primarily be increased social sustainability – a broad concept which includes increased community wellbeing and having rural development opportunities (Magis and Shinn 2009). However, like resilience, social sustainability also lacks definitional clarity (Vifell and Soneryd 2012). Based on a thorough review of the literature on social sustainability, Murphy (2012) identified four key concepts – equity, public awareness of sustainability, participation, and social cohesion – that are and should be policy goals. From our field observations in L'Aquila, it was evident that these four concepts were embedded in community resilience in action, especially as outcomes that arose from the actions of people in post-disaster situations.

- *Equity* (sharing) – aftershock economies emerged in that people selflessly shared whatever resources they had. They shared what they had in their own pantries, shopkeepers shared their stocks, and village café owners provided food for free to anyone who needed it. Spontaneous networks of solidarity were created distributing first aid supplies and useful equipment according to the needs of each group. There was no place for, or point in, surplus accumulation or hoarding – people shared generously and equitably, knowing that each person's survival (including their own) depended on this sharing.
- *Public awareness of sustainability* (knowing what to do) – aftershock communication emerged at all levels. People shared stories and strategies through all forms of media and in person, and in the process they strengthened their sense of place, sense of community, their sense of public duty and social responsibility, and increased their awareness of the social risks and vulnerabilities they faced. Resilience was built through the sharing of the extraordinary stories of ordinary people, as well as through the learning by doing that occurred in everyday activities (Berkes 2007).
- *Participation* (being involved in decision making and action) – aftershock engagement occurred in that there was a widespread will to participate and share in the work that needed to be done in the camps, with many people making considerable contributions to initial relief operations and to how life in the camps was organized. People shared their thoughts and ideas, and came to collective solutions which they implemented together. Despite the top-down, command and control tactics of the DCP, people in the camps implemented a caring environment where participation and inclusion were valued and taken as serious components of disaster emergency management and post-disaster survival.
- *Social cohesion* (community wellbeing) – aftershock societies emerged in that people created a social environment of purposefulness, cooperation, naturalness, candour and joyfulness in planning shared solutions for the overall community wellbeing. People had fun in being together and doing things together. People learned to tolerate each other and to respect each other.

3. Defining the system boundary (resilience of what to what?)

The identification of system boundaries is a political question, not one that can be answered by the ontological theories of the natural sciences or systems theory (Porter and Davoudi, 2012). This is arguably true irrespective of the nature of the system under consideration, but it is especially true for social systems. We consider that discourses about resilience in social contexts should be about the resilience of local communities, especially vulnerable communities, those in crisis, those that have experienced a disaster, and/or those that experience in their daily lives the

negative social and economic impacts that come from living at the frontline of, or that interface with, undesirable or unwanted change – irrespective of whether this change is induced by climate, advancing capitalism, green-grabbing, or development ostensibly in the public interest (Vanclay 2002, 2012; Vanclay et al., 2015). However, the dramatic context of a post-disaster situation makes the issue of defining resilience ‘*of what to what*’ extremely real and particularly pertinent – it is local communities (and often rural communities in the so-called less-favoured regions) that are on the frontline and have to deal with the tragedy and the multidimensionality of disasters and other unwanted changes.

In European rural development policy, “places are defined through the policy process from a functional perspective as regions in which a set of conditions conducive to development apply more than they do in larger or smaller areas” (Barca, 2009, p.XI). Social systems are nested systems in that they exist at multiple levels, with outer systems influencing (but not controlling) inner systems (Binder et al., 2013). Individuals, families, villages, communities, even regions and nation states are systems. Thus, in this paper, we considered the resilience of systems at local levels, the resilience of individuals, families and communities. We found that at these local levels, there were strong elements of resilience that existed as valuable resources to be called upon in times of need. However, at outer levels, the systems seemed to lack resilience as demonstrated by the slow progress in post-disaster reconstruction and redevelopment (Alexander, 2010; OECD 2013; Søndergaard, 2013; Venturini and Verlinghieri, 2014; Forino, 2015).

In terms of the ‘to what’, the resilience of local communities means their ability to cope with and positively transform in response to change from any source. In our case, the perturbation to the social system was first a disaster in the form of the earthquake itself. Later, people found that they had to cope with the ongoing experience of the aftermath of the disaster and the recovery, reconstruction and redevelopment efforts. At the time this paper was being finalised more than seven years after the earthquake, the majority of people were still not back in their houses. There still is considerable hardship being experienced. Furthermore, local people have also had to cope with the prying eyes of disaster tourism (Wright and Sharpley, 2016). While most of our research participants considered that living together in the tent community was a positive experience, the ongoing burden of being homeless (albeit with a place to live) was (and still is) wearing. By living in rural and mountain territories and/or in disaster-prone areas, local people have to be able to cope with the normal disturbances that arise from typical social change processes (see Vanclay, 2002) that affect these areas, for example regional decline, out-migration, coastalisation, land abandonment, land degradation, rural ageing, social fragmentation, etc. Thus, in general terms, ‘to what’ means any perturbation that may be faced by a community, whether of a short or protracted duration; whether intense or mild; whether familiar or novel.

4. Issues of justice and fairness (defining resilience for whom?)

Community resilience leads to better outcomes for everyone. It comes into action through the cooperative behaviour of individuals, bringing benefits to all people. As noted above, an immediate concern was for the children, the elderly and other vulnerable people. Very quickly, an aftershock economy developed, not based on narrow self-interest or capitalistic accumulation, but on enlightened self-interest and collective wellbeing. However, communities, especially the larger towns and cities, also include local elites who can often be extremely resilient in perpetuating ‘business as usual’, including in post-disaster places. Good governance, policing and vigilance are necessary, not so much to stop the very rare situations of looting by individuals that occur, but rather to control the massive exploitation wrought by corrupt leaders and unethical large firms. Resilience is about enhancing the wellbeing of all people, especially the worse-off members of society – it is not about protecting the financial interests of the rich and powerful.

Conclusion

Recognising and understanding community resilience in action requires a cognitive and epistemological switch away from an ontological intellectual speculation about how resilience might be defined in social or other terms, to a phenomenological observation of the social reality of resilience as it emerges and is activated in real situations where it is called upon, such as in post-disaster situations. The post-earthquake situation in the rural villages around L'Aquila was an ideal context in which to experience and witness how community resilience actually occurs. Although we told only a few of the many hundreds of stories we could have told, from our stories of ordinary people in the camps as well as those of professionals who, as a matter of course, went well beyond the normal expectations of their role, it is clear that there are tremendous reserves of resilience in communities that are called upon in times of duress.

Observing community resilience in action helps in understanding what community resilience actually is and how it occurs. It also helps in considering through what kinds of social relationships and settings resilience comes into action, and what capacities and skills people need to develop in order to cope better with the challenges they face when disaster strikes. We discovered that sharing pain and sorrow, experiencing a common fate, realising that we must all be "our brothers' keepers" (Solnit, 2009), and rediscovering the joy and human need of being together were all feelings that were widespread and strongly held by survivors. Where people had the opportunity to organize themselves (rather than to be organised by a dis-empowering external agency), collective reflections on common problems and shared solutions emerged. Local people also constantly improved on the top-down solutions imposed on them.

We discovered that in post-disaster situations, community resilience leads to the emergence of *aftershock economies* and *aftershock societies*. People in resilient communities share resources and put in place their own knowledge and capacities to collectively cope with change. They also share strategies and stories (*aftershock communication*) that strengthen their sense of social responsibility, their sense of public duty, their sense of place and the extent of their participation (*aftershock engagement*). Solidaristic behaviour, cooperation and mutual aid emerge, leading to the creation of a wonderful atmosphere of purposefulness, candour and joyfulness, which helps in strengthening people's sense of community, social cohesion and social capital.

Acknowledging the existence of community resilience in action leads to a rejection of the myths about community behaviour in post-disaster contexts. Instead of the panic myth and the helpless victim myth, we observed people consciously organising to help themselves and each other. Instead of amoral behaviour and social disorganisation, there was a strengthening of moral behaviour as people became much more community-oriented. Instead of looting and lawlessness, people selflessly shared scarce resources. Instead of abandonment of duties, public officials went to great lengths to help others, putting their public duties well ahead of their personal interests.

We define community resilience as the social survival processes that occur within a place that are put into action by local communities in order to address the negative social and economic impacts they perceive as common problems during crises. We discovered that resilient strategies are shared and put into action by people through their feelings of empathy and solidarity, social responsibility, sense of public duty, and through their local knowledge and capacities that lead to awareness of the commonality of problems and the realization of cooperative actions that are accomplished within a place. Public interventions that seek to develop and empower community resilience among people living in vulnerable areas may be able to help in building social and territorial cohesion around a shared vision. They can also help in re-establishing a public ethic, renewing local public services, and in re-imaging, re-designing and re-inspiring community-led action for sustainable social change.

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